

REMARKS

Favorable reconsideration and allowance of this application are solicited.

By way of the amendment instructions above, claim 1 has been revised so as to recite that the polyisobutenyl radical R is derived from a polyisobutene which is the product of an isobutene polymerized in the presence of an initiator system as defined – i.e., is derived from a reactive polyisobutene. Support for such amendment can be found on page 1, lines 20-22 and page 3, lines 8-21 as well as original claim 3 (which constitutes its own "disclosure").

Claim 3 has been recast as an independent process claim. Claims 12 and 13 have also been amended so as to address the Examiner's criticisms. Thus, claim 12 has been revised to clarify that it is directed toward a method for reducing deposits in valves, carburetors or injection systems of an internal combustion engine, comprising adding to a fuel a deposit reducing effective amount of the polyisobutenamine as claimed in claim 1. Claim 13 has been revised so as to require the presence of at least one polyisobutenamine as claimed in claim 1, and another (different) fuel additive component.

Thus, amended versions of claims 1-14 remain pending herein for consideration. As will become evident from the discussion below, applicants suggest that all such claims are in condition for allowance.

I. Response to Statutory Rejections

A. Response to 35 USC §112 Rejections

The Examiner will note that the font employed to present the amended claim set above provides more clarity between the lowercase letter "l" and numeral "1". As such, it is believed that the Examiner's observations in paragraph 3(a) have been addressed.

Furthermore, the amendments presented above also are believed to address the Examiner's observations in paragraph 3(b)-(d).

Therefore, all issues raised under 35 USC §112 are believed to have been mooted.

B. Response to 35 USC §103(a) Rejection

Original claims 1-2 and 12-14 attracted a rejection under 35 USC §103(a) as allegedly being "obvious" from, and hence unpatentable over, USP 6,133,209 to Rath et al ("Rath et al '209). Applicants suggest, however, that Rath et al '209 is inappropriate as a reference against claims 1-2 and 12-14 pending herein.

Applicants note in this regard that one striking difference between the polyisobutenamines of the present invention and those of Rath et al '209 is the position of the amino group in the polyisobutene chain. Specifically, the Examiner will observe that, in the polyisobutenamines of the present invention the amino group is positioned **at the end** of the polymer chain. This positioning can be seen from the fact that the polyisobutenyl radical R is derived from a reactive polyisobutene. Reactive polyisobutenes are characterized by having a **terminal** reactive functionality, usually a terminal olefinic double bond (see, e.g. page 14, lines 43-45 of the originally filed specification). It is clear therefore that in polyisobutenamines which are derived from reactive polyisobutenes, the amino function is also situated **at the end** of the polymer chain.

In stark contrast, the polyisobutenamines of Roth et al '209 are derived from polyisobutenes with **internal** olefinic double bonds. This positioning can be seen from the fact that the polyolefins described in Roth et al '209 are obtained by catalytic dimerization of e.g. isobutene oligomers (see abstract, col. 2, lines 45 to 49 and claim 1). It is therefore clear that the dimerization of e.g. isobutene oligomers leads to

products with an **internal** double bond. This is also shown in table 1, col. 19 of Roth et al '209 , where the vinylidene content of the polymer product (i.e. the content of terminal double bonds) is characterized to be 0. Therefore, the amino function of the polyisobutenamines described in Roth et al '209 -- which amino function is introduced through the reaction at the **internal** olefinic double bond -- is also bound at an internal position of the polymer chain. Applicants further note on this point that claim 8 of Roth et al '209 does not disclose terminal polyisobutenamines, but instead R is simply required to be a polyolefin radical. However, this does not mean that it is necessarily bound to the amine at its terminus.

From the discussion above, the Examiner will now realize that a person skilled in the art would have deduced from Roth et al '209 that the binding of the amino function at an internal position of the polymer chain is an important feature for the detergent properties of the polyisobutenamine. Therefore, the skilled person would not have found any motivation to use polyisobutenamines which are derived from reactive polyisobutenes, thus having the amino function located at a terminal position of the polymer chain, because he would have expected that the detergent action would be worse than in the case of the polyisobutenamines of Roth et al '209. However, as the examples of the present application prove, the polyisobutenamines of the present invention do not only show a good detergent action but also a very advantageous viscosity behavior. Therefore, the claimed polyisobutenamines can be used with a substantially reduced amount of additional assistants, such as carrier oils. These positive effects were not predictable from Roth et al '209.

Therefore, using the proper statutory review for obviousness determinations under 35 USC §103(a), it must be concluded that the present invention as defined in claims 1-2 and 12-14 cannot be

II. Response to Non-Statutory Rejection

Original claims 1-2 and 12-14 also attracted an "obviousness-type" double patenting rejection base don claims 1-19 of Roth et al '209. In response, the comments above regarding the unobviousness of the presently claimed invention over Roth et al '209 are equally germane to the issue of double patenting. Thus, it should now be clear that the present invention as claimed is not a mere obvious extension of the subject matter defined by claims 1-19 in Roth et al '209 but instead are patentably distinct therefrom.

Withdrawal of the rejection advanced under the judicially created doctrine of obviousness-type double patenting is therefore in order.

III. Conclusions

All issues raised in the Official Action of May 5, 2005 have been address by way of amendment and/or remarks presented above. As such, withdrawal of all objections and rejections against this application are in order so that the same may be passed expeditiously to issue. Such favorable action is therefore solicited.

Respectfully submitted,

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